**MEETING OF THE CALIFORNIA STATE BOARD OF FOOD AND AGRICULTURE**

(ALL MEETINGS OPEN TO THE GENERAL PUBLIC)

Location: Department of Food of Agriculture
Main Auditorium
1220 N Street
Sacramento, California 95814

Contact: Helen Lopez
Office: (916) 675-3231

MEETING MINUTES FOR JUNE 28, 2006

Item
No.

**(1) CALL TO ORDER**

(a) The meeting was called to order Wednesday, June 28, 2006, at approximately 8:30 a.m. Al Montna, President of the State Board of Food and Agriculture presiding.
(b) Welcoming remarks provided by Al Montna.
(c) Pledge of Allegiance.

**(2) ROLL CALL**

Roll call taken by Helen Lopez, Executive Director. A quorum was present.

**Present:**

| | | |
|---|---|---|
| Ashley Boren | Craig McNamara | Al Montna |
| Drue Brown | Marvin Meyers | Karen Ross |
| Reg Gomes | William N. Moncovich | |

**Absent:**

| | | |
|---|---|---|
| Charles Crabb | Niaz Mohamed | Ann Bacchetti-Silva |
| Luawanna Hallstrom | Adan Ortega | |

**(3) APPROVAL OF MINUTES – May 31, 2006**

**MOTION: Board Member Craig McNamara moved to approve the minutes of the May meeting. The motion was seconded by Board Member Ashley Boren and a unanimous vote carried the motion.**

**(4) OPENING REMARKS AND INTRODUCTION**

Board President Al Montna welcomed everyone and thanked Board Member Ashley Boren for her great work in the organization of this meeting and the speakers for addressing the Board on climate change and biofuel issues. President Montna introduced Secretary Kawamura for comments and departmental updates.

**(5) DEPARTMENTAL UPDATES**

Secretary Kawamura advised the Board of his current tour of a 7000 acre cattle ranch in Kansas where he accompanied Ernie Shea and other members of the 25x25 Coalition, a group looking at sufficient pyridine solutions for future energy supplies that ties well into the day's topics of climate change and resource utilization. An interesting part of the tour was a 100 turbine generated electrical wind farm. Each wind turbine presents a $2 million investment that is generating enough electricity for 40 thousand homes. Wind farms such as this confirm multiple-set solutions to energy alternatives and opportunities for the future of agriculture.

California is motivated to be at the leading edge internationally in climate, environmental, and labor protection to make the state a 21st century sociality. This is the time to bring all the state's resources together to achieve these goals. Secretary Kawamura thanked the Board for continuing to bring together different solution area experts to converge resources to accomplish this vision for California's future.

**(6) OTHER BUSINESS**

The Board would like to do a proclamation recognizing the outstanding contributions made by David Nunenkamp, CDFA's Deputy Secretary for Legislation who recently passed away. Mr. Nunenkamp was also the main science advisor to the Governor, as well as, the department. He was an inspiring individual who pursued and embodied the philosophy of good science based decision-making policies for the agricultural communities of California.

The Secretary invited members of the Board to attend Mr. Nunenkamp's memorial service scheduled in July.

**MOTION: Board Member Marvin Meyer moved to give the Board the authority to write the proclamation that will be presented to Mr. Nunenkamp's family at the memorial service. The motion was seconded by Board Member Drue Brown and a unanimous vote carried the motion.**

The Board was directed to provide letters of support for USDA's Air Quality Task Force representing several California agricultural industry candidates.

President Montna suggested that the 2006 Board meeting agenda begin in August with a review of the 2005 resolutions and proclamations to see what further actions the Board would like to take and to get input from the Board as to which speakers to invite back from the different panels of the hot topics represented and to discuss this with the Secretary. At the Secretary's suggestion, the September meeting would be concluded in the Central Valley to review the Ag Education Programs at the community colleges and state universities and meet with the educators to take any actions necessary.

Mike Bar of the MIT Board, who also worked with the Joint Chiefs of Staff and heads the Ag Leadership Program and is the former head of Advancement at CalPoly's school of agriculture, has been invited to the October board meeting. The pentagon has declared (especially) California's Agriculture a strategic resource in the defense of this country and Mike Bar will present a program with members of the Joint Chiefs of Staff (MIT) to highlight the fact that California agriculture is more than food; it is deeply embedded in the security of this country.

Craig McNamara has volunteered the Ag Learning Center for the November meeting that will highlight the impacts of the learning center, conservation, and other topics.

The December meeting topic and location is to be determined.

Secretary Kawamura briefed the Board on the upcoming Farm Bill Hearings scheduled as follows: July 6, (Salinas), July 12, (Los Angeles), and August 1, (Sacramento). The goal is to have a working document prepared by September on what the first farm bill for the 21st century will look like as directed by the Governor. USDA Secretary Johanns is pushing for a 2007 Farm Bill. Secretary Kawamura encouraged board members to attend any or all of the hearings.

## (7) PRESENTATIONS BY GUEST SPEAKERS

***Climate Change: Science Foundations, Range of Possible Impacts***
**Chris Field, Carnegie Institution: Department of Global Ecology & Stanford University: Department of Biological Sciences**
Chris Field provided a presentation on the background and facts about climate change and highlights on the range of possible impacts. He framed his remarks using an editorial that appeared in the Wall Street Journal on Monday, June 26, 2006, published by MIT Professor Richard S. Lindzen. Professor Lindzen is considered the most creditable of the long-term skeptics about climate change. He has made important contributions to climate science and has been very resistant to the climate change paradigm. His arguments establish a foundation for where the field of climate science is in general.

Mr. Field addressed these arguments using data submitted by the Intergovernmental Panel on Climate Change (IPCC) and the National Academy of Science. The data clearly demonstrated that there has been substantial warming over the last 100 years and the criticism stems from a lack of confidence in the data prior to the 1600s and this is acknowledged in the uncertainty factors of the data. The National Academy of Sciences released a report that evaluated all of the proxies that have been made that evaluated the accuracy of temperature anomaly. The conclusion of the National Academy of Sciences Board report was that global surface temperature was higher in the last few decades of the 20th century than during any comparable period during the preceding four centuries. Most of the climate community agrees that global mean temperature has increased on the order of one degree Fahrenheit over the past century. There is also little disagreement that levels of carbon dioxide ($CO_2$) in the atmosphere have risen from 280 ppmv (parts per million by volume) in the 19th century to 387 ppmv today. This increase in $CO_2$ is an infrared absorber (i.e., a green house gas) which theoretically contributes to warming. The IPCC's conclusion that most of the observed warming of the last 50 years is likely to have been due to the increase in $CO_2$ greenhouse gas concentrations reflects the current thinking of the scientific community on this issue. The degree of confidence in the IPCC assessment is higher today than in the past 10 years. This warming has impacted change in frost-free length and trends in global plant growth. Climate-change responses are already clear in plant growth, signs of earlier springs, range shifts, wildfire, and agricultural yields. 2005 was the turning point. Global warming leads to warmer ocean waters, which leads to hurricanes. The Climate paradigm is more realistic.

***Overview of the Climate Action Team***
**Mike Hanemann, Chancellor's Professor of Environmental Economics and Policy, Department of Agricultural and Resource Economics**
Mr. Hanemann stated that agriculture is the single most important sector that is affected by climate change in California and the United States. The pathway by which it is most directly affected is temperature.
The other pathway by which Californians and the CA economy are vulnerable to and affected by climate change is through water supply. Some think that precipitation is a major component of

our water supply and the effects on it, but evidence shows that it is temperature to, which is the key pathway. Mr. Hanemann's main point was that climate change is underway, it is occurring and it is not a matter of speculation. The speculation is the pace of climate change in the future, the pace of which temperature has been rising and climate change picking up dramatically after the last 30 to 40 years, tremendously different than the first 50 to 60 years of the 20th century. The pace of the last 30 to 40 years is unprecedented in terms of changes. The speed with which temperature is changing, carbon dioxide is accumulating. What this means essentially is we are losing March. Stream flows that occur in April are being seen in March and moving towards the beginning of March. Thus the growing season may start in February, not in March or April and this has profound implications and shows no signs of stopping. Hanemann talked about a set of studies done by the Climate Action Team, which is sometimes called the scenarios project. The background for this began when the Governor announced his emissions targets for California in June 2005. The governor called for a scientific report to be delivered to the legislature in January and to be done every two years with the next study due in 2008. This is an effort that involved 75 to 80 researchers who in July 2005 had a deadline of Thanksgiving for completing the reports. The basis for the work is studies funded by the CA Energy Commission and Cal/EPA and other agencies that contributed under the leadership of Cal/EPA. The logic of this approach was to take global projections of climate change coming out of the major models and downscale them to California so that the special scale would be much finer. Then taking these impacts such as changes in temperature, changes in precipitation on a fine grid over California month by month throughout the 21st century and look at what this might do to stream flow, agriculture crops, trees, etc. The goal of the study was to identify gaps and try to improve the analysis by 2008. The study looked at eight things; water, agriculture, forestry, wild land fire, timber production, impacts of a raise in sea level, impacts on air quality and public health and impacts on electricity. What is novel about this study is that it looked at two different emissions scenarios. The new models now suggest that temperatures will continue to get even warmer in the summer in what can be foreseen as an alarming trend.

***Overview of Soil Carbon Sequestration, its potential and the types of practices involved, and research in California***

**Dr. Kate Scow, Director, Kearney Foundation, UC Davis**

Dr. Kate Scow provided a background of the Kearney Foundation. She stated that the Foundation, a UC system wide endowed research foundation, was established in 1951. A new mission is selected every 5 yrs to solve problems on contemporary agricultural/environmental issues in CA and support basic research in soils, plant nutrition and water science. The next mission is scaling across time and space.

The following statistics were provided by Dr. Kate Scow:
Agriculture is a pretty small source of:

**$CO_2$**

- **Sources:** Fossil fuels, biomass burning, soil degradation
- **Sinks:** Buildup soil organic matter and plant biomass

GWP (Global Warming Potential) = 1

**$N_2O$**

- **Sources:** Fertilizer, crop residues, manure
- **Sinks:** No agricultural sinks

GWP = ~300

**$CH_4$**

- **Sources:** Livestock, manure, anaerobic soils (rice)
- **Sinks:** Aerobic soils, especially forests and grasslands

GWP = ~20

Opportunities for Carbon sequestration in soil are:

- Carbon sequestration is long term storage of C in environment (soil, water, biota, rocks)
- Soils contain 75% of terrestrial carbon pool
- Soil Carbon can be increased by reducing losses and increasing inputs

Thus Carbon sequestration in agricultural ecosystems can account for about 5-10% of global emissions (based on 7100 MMTC per yr in 1990). Management-induced Carbon sequestration in soil is only temporary and partial solution to the greenhouse gas problem.

Practices for Carbon sequestration are as follows:

- Reduced and zero tillage
- Set-asides/conversions to perennial grass
- Reduction in cultivation of high organic soils
- Winter cover crops
- Intensification
- More diverse crop rotations, e.g. more hay
- More efficient use of irrigation water? Drip?

Practices for $N_2O$ & $CH_4$ emission reduction $N_2O$ mitigation

- Better match of N supply to crop demand
- Better organic N (e.g. manure) recycling
- Advanced fertilizers (e.g. controlled release, nitrification inhibitor)

$CH_4$ mitigation

- Improved livestock breeding and reproduction
- Nutrition (e.g. forage quality, nutrient balance, additives)
- Manure composting
- Rice (water and nutrient management)

**Ancillary benefits of GHG mitigation**

**C sequestering practices**

- Reduced erosion to surface water and air
- Improved soil quality and fertility
- Improved water quality
- Conservation Reserve lands - Wildlife habitat and biodiversity
- Biofuel production

**$N_2O$ emissions reductions**

- Reduced leaching and ammonia volatilization
- Improved water quality (well nitrate, hypoxia, algae blooms)
- Less fertilizer waste

**$CH_4$ emission reductions**

- Improved water and air quality (manure handling, odors, runoff)

**Carbon Sequestration projects funded by Kearney**

- Standard and multi-PI research proposals funded at UCB, UCD, UCR, UCSC, UCI, UCSB and UCM
- Joint Kearney/CDFA program funding 3 proposals on soil carbon in specialty crops

- Joint Kearney/CEC program funding project on estimating potential for C sequestration in CA agricultural soils
- "Measuring the Environmental and Socioeconomic Trade-Offs/Synergies of Alternative Land Uses" – An Applied Workshop: Steve Vosti, UCD Dept. of Ag. Econ.

**Conclusions:**
- Cover cropping, low input, reduced tillage and organic seem to have potential in California.
- What about manure, compost, drip irrigation and set-aside?
- Fuel C and N2O are major player in greenhouse gas budgets; especially in California
- But measurements and modeling issues with N2O
- Use of improved management practices show a significant technical potential for GHG mitigation, but agriculture is only part of the solution.
- Bundling' GHG mitigation with other environmental goals should increase benefit and cost-efficiency of agricultural GHG policies.

***Other Ways Agriculture can be part of the solution-capturing methane, cover crops, energy conservation and moving away from fossil fuels***
**Matt Summers, Ag. & Environmental Stewardship, CA Dept. of Food and Agriculture**
The focus of Mr. Summer's presentation was renewable energy opportunities in California Agriculture. He indicated that agriculture has a history of using renewable energy including, draft animals, biofules, solar and wind. Renewable energy opportunities for California include: biofules (biodiseal, ethanol and biomass); anaerobic digesters (reduces the methane emissions from diary facilities and displaces energy); on-site generation (wind, PV, Hydro); solar, thermal and drying systems; and re-use of wastes and nutrient management. Mr. Summers stated that renewable fuels are very critical in CA and that 6% of California's gasoline is renewable ethanol. The benefits of renewable fuels are: new markets/crops; possible energy independence/cost reduction; reduction in pollutant emissions; reduction in GHG emissions; rural economic development; and stabilization/disposal of waste material. Key challenges to renewable energy in agriculture include: development of long-term markets; development of processing infrastructure; connection to infrastructure; cost of labor; system reliability and maintenance; and regional regulatory requirements.

***No Regrets Framework***
**Dr. Robert Wilkinson, Director, Water Policy Program, Donald Bren School of Environmental Science and Management**
Dr. Robert Wilkinson discussed the challenges facing California, and discussed his "No Regrets Policy." He began by stating it is important to note that with more energy in the system, the basic physics that we expect is increased precipitation on a global average. None of us live on that global average, so there is a pattern shift. We will see more precipitation in some places and less in others or more precipitation in shorter amounts of time, which translates to flooding and other related problems. The runs that were completed for the US National Assessment indicated that for California, there was a 100 % increase in precipitation. And the Canadian model indicated substantial increases in precipitation statewide. The challenge for California is how to grow a robust, resilient, productive, profitable and sustainable agricultural sector. As you look at other challenges facing California including: population growth, land use, ag land conversion, over appropriated water resources, markets in volatility, some of the human health and environmental issues that we are looking at, climate change is seen to be one more item on the list that affects all of this. Every major water system in California is over allocated, this is a strong statement. But if we look at the Klamath system, we are diverting more than 90% of the Trinity River into the valley and we are at roughly 50/50 in the trinity going into the coast and into the valley. Groundwater in the Central Valley and overdraft of the Mono lake and Owens Valley storage and restoration are going on in the Colorado River system. All of these systems

are over allocated and we have to come to grips with how to deal with limited supplies, and multiple calls on those water supplies. The General Circulation models (GCMs) are all indicating warmer conditions and that all translates to more rain plus snow. But this does not mean that the precipitation might increase. So thus we could get this anomaly of more precipitation and larger snow packs with a high precipitation future, at least at the higher elevations.

The models/graphs in Mr. Wilkinson's Power Point allow for a sense of what the Sacramento watershed would look like. This may or may not be what the future will look like but it is a scenario that would cause us to think pretty hard about the implications of the warming. We need to think about what to do based on the scenarios presented. Right now, there are major drought events occurring throughout the world, interestingly they are broken down by precipitation events that are very heavy precipitation. This just happened in Texas recently. This is another piece of the puzzle; what happens to the insects and potential for impacting human health and ecosystems including agricultural ecosystems? What does this mean for the G7 continental economy of California? When the Whitehouse asked for this study from the National Academy with the current administration, the National Academy looked at the science and said the science is real and temperatures are rising. Greenland has received a great deal of attention; it appears that the water is dropping through the ice, lubricating the system as it flows along the rock out to the water. Now we are starting to talk about meters of sea level rise. There is much more rapid melt on Antarctica and Greenland. We need to start thinking about what if…what does this mean for infrastructure, and for land use in the delta and so forth. We need agriculture to think about some things that others might not think about. For example chill hours for stone fruit, warmer nighttime temperatures, are some of the projection in a number of models. There are potentially big impacts on agriculture, not today perhaps, but as people think about investing in crops that are perennials crops that are going to last for long periods of time, what should we be thinking about in terms of temperature patterns day and night and seasonal. For precipitation patterns, we think about floods and droughts, we think about this earlier spring. Even if the precipitation patterns stay roughly the same, if the patterns shift a bit, we could have some problems. The warm rain in August is generally not a good thing for California agriculture, for almonds, grapes, etc. If we do see patterns of warmer temperatures what does this mean for predator-prey relationships, big challenges for natural ecosystems and agricultural ecosystems. A big precipitation event like the last El Niño impacted the artichoke industry. It is important for California Agriculture to look at what happens in other parts of the world in terms of climate change. What does this mean for what is being grown and traded on those world markets?

***Review of the Economic Analysis of the impact on CA economy of reducing greenhouse gas emissions***

**Mike Hanemann, Chancellor's Professor of Environmental Economics and Policy, Department of Agricultural and Resource Economics**

Mike Hanemann talked about the cost of the California economy and producing greenhouse gas emission in CA. The US is responsible for about 25% of all greenhouse gas emissions worldwide. CA is responsible for about 10% of the US emissions. CA as a separate country is the 12$^{th}$ largest emitter of greenhouse gasses in the world. Transportation is the largest emitter. The Pavley bill in the legislature aims to control emissions from transportations. Mr. Hanemann also indicated that we import a lot of electricity from out of state. The emission reduction for 2010 and 2020, takes us back to our emissions in 1990. The 2050 topic is to reduce CA emissions 18% below the 1990 levels by mid century. This is an incredible target. An emission reduction of that magnitude on that timeframe needs to be achieved by the developed countries of the world if we are to avoid a more than doubling of global CO2 concentrations. The developed world has to have a de-carbonization of the economy…this may be achieved in 2070

not 2050. This will take decades to develop and we have to start now. This needs to be the focus of attention.

How can GHG emission reduction produce an economic benefit?

- Some major policies involve improvements in energy efficiency – for vehicles, for buildings, etc. These save money for consumers, which benefit the economy.
- While other policies raise costs for consumers, this triggers a shift in spending away from less energy-related items that are less labor intensive commodities towards services that are more labor intensive. Hence, a net increase in jobs.

***Production Agriculture's response to state administrative and legislative climate change proposals***

**Cynthia Cory, Environmental Affairs, CA Farm Bureau Federation**

Ms. Cory stated what matters is that we have a Governor that has announced that we are going to have a cap and trade program in the state and we have to figure out how we are going to be a part of it and stay in business. The Cap report, which has been alluded to, has now turned into AB 32, and this is where the rubber meets the road. It is being touted, not only by the Secretary of EPA but by everyone who talks about it over at the Capitol including the environmental community as the number one environmental bill of this legislative session. This is one of the biggest environmental bills, effort policies that I have seen considered. AB 32 is going to have a huge impact in a lot of different ways. It passed the Senate Environmental Quality Committee 5 to 2. It is called the California Global Warming Solutions Act of 2006, and we are the poster children for what is going to happen. As we know, acts have findings, and the number two finding in AB 32 is that global warming will directly impact agriculture, wine and forestry and that was clearly displayed here today. We need to pay attention to this and be a part of this because it is going to affect us. So what is AB32 going to do? AB32 as of 2008 is going to figure out what our statewide emissions are for 1990. I pulled off of the Department of Finance that in 1990 we had 29 million people here, so we are going to figure out what our emissions are and in 2009 we are gong to put together the emission reduction strategies to get us to our 1990 emissions. We are going to put them into regulations and they will then start being enforced in 2012 and by 2020 we will get to our 1990 emissions. This is scary for the agriculture industry; AB 32 is a Kyoto protocol for our state. This is why we have to do something, because pests, disease, and floods will get us. We are trying to figure out ways that we can be part of the solution. We need to be supporting research. We need to have the science before the regulations. What is a Cap and Trade? For instance, when PG & E is told that they are going to have to cap their emissions, they will have to figure out a way to get refrigerators and electricity to those 14 million people that are going to move here. They are going to have to go somewhere else to find an emissions reduction strategy. My concern is that this is not going to pencil out. If 5-15 % of our input, and that is just on farm water pumping for energy, is our electricity cost, are you going to be able if you are not a winery, or a dairy or if you are not able to sequester carbon, if you are not able to be one of these reduction emission strategies, is this going to balance out? The only other thing to mention is that we are concerned about a state only Cap and Trade program. Enacting such a program could negatively affect California based companies that participate in the world market.

***Biofuels/Update on Sweden Trip***

**Bill Jones, Chairman of the Board, Pacific Ethanol**

Mr. Jones indicated that the trip to Sweden with the state Delegation was excellent. The information that he recommended to add to the body of what everyone heard today comes from the people they heard in Sweden. Mr. Jones will e-mail this information and presentation to the Chairman. The two issues that he saw most predominantly in Sweden where one, the changes taking place because of the European Union's overall approach on the greenhouse gas effort.

Sweden has been working independently to some degree now and is being pulled into the overall plan. There are two elements they are working on. One is the biogas effort, which is quite substantial. And between the biogas and the ethanol cellulosity programs that he looked at, he was more impressed with the biogas progress they had made. Mr. Jones thought it was substantial and scalable and has great practicality for California, not just in the dairy arena, but also all applications. Mr. Jones indicated he has a presentation that they all received and will send it through the Chairman and Secretary. Secondly, ethanol was a major part of his interest in this trip and seeing what they were doing in areas of cellulosity. "A number of us traveled and looked at a plant that they are working on. They have been making ethanol in Sweden for many years. They had 40 plants working during WWII, so they know and have just as much experience as anyone in this. And yet nonetheless, the plant we were looking at was having a number of serious problems. This was a plant using acid hydrolysis, which is not a new technology, but was challenging and not withstanding a lot of their forestry that they have there. They were importing pressed woodchips from Canada for those facilities which I thought were interesting because of the technology of moisture vs. dry matter. So I think you will find this brochure and information on the cellulosity interesting, but I think my analysis after looking at that is that if there is still some ways to go that not withstanding the promises of cellulosity ethanol from a scalability standpoint and also from the standpoint of cost per gallon production for this Country is maybe a little ways off, not withstanding what Shell and Chevron and other companies are doing on this issue. To condense it down, $4 dollars a gallon, or in that neighborhood for production of ethanol for cellulosity purposes. There is a ballpark in the number I think we came up with trying to convert all the numbers from metric to what have you. And while in the EU the price of fuel is dramatically higher than here, it will be sometime before that would be a realistic replacement for dry mill ethanol technology which will currently have scalable, financially producing both in this Country and producing in CA. I think the takeaway from my part of this trip is simply they are very focused on renewable for biogas E85 and have over 300 stations. They will have over 400 stations next year. It's been a market pull to get them going. They have been working off of inexpensive Brazilian ethanol to get them where they are. And now they refocused based on the interest in greenhouse gas and trying to develop an aggressive internal industry on both biogas and ethanol."

***Biofuels/Update on Sweden Trip***
**James D. Boyd, Commissioner, CA Energy Commission**
Mr. Boyd provided a copy of his power point presentation for attendees to look at. Mr. Boyd wanted to discuss the background that led them to Sweden and what California's interest is in this subject. He stated that CA has been interested in using its biomass resource for about a decade at least. The problem is that economically it couldn't compete without subsidies, which is what we have done for a long time. The world has changed a lot in the past years and changes its dynamics and now we are trying to change the economics. Sweden is going on two tracks, one is ethanol and the other is biogas. And of course we are interested in both. Mr. Boyd had the fortune of going to Sweden two years ago on behalf of an organization known as Business Region Gothenburg. A combination between that organization, a non-for profit regional business development in the Gothenburg area, which is Sweden's second largest city, and Cal-Start which is a CA not-for profit. The biogas issue was an extreme interest to them because the Energy Commission has been funding dairy digesters and looking at other alternative fuels for quite some time. As a result of that visit, the Environmental Minister came to CA in 2005 and returned home and sent an invitation to the Secretary and then Cabinet Secretary Terry Tamminen, to have a CA group come over again and talk about cooperation between CA and Sweden with their 9 million people and our 36 million people. It's a pretty good trade in terms of nation to nation. As indicated, what they have done is extremely impressive and the tracks they are following. Mr. Boyd talked about drivers, what has caused them to do what they have done vs. why CA government is so interested in the subject. Sweden is an early adopter of

climate change action and moving into alternative fuels, using waste materials, etc… They are very cognizant of the problem of oil in Europe and the high prices for transportation. The first time he went there, CA had air quality problems, concerns about water quality, was talking about climate change, and was interested in renewables in general. The Governor's program on climate change followed by the recent activities in the area of bioenergy and biofuels has given us a host of new drivers for CA interest. Some of the slides on the power point provide information on the Governors bioenergy plan. Last August the Governor commented on the Intergraded Energy Policy Report of the Energy Commission which is a comprehensive report on helping the energy situation which is done every two years. This is a result of legislation after the electricity crisis that occurred in CA. That document called very strongly for us to move into alternative fuels to re push renewable fuels for electricity generation as well and talk about our need to reduce our dependence on petroleum and moving to alternative transportation fuels. Last August, the Governor called for an alternative fuel's plan to be provided to him and in particular he referenced bioenergy. Legislation was passed about that same time that called for an alternative fuels plan by next year and so the Governor changed his charge to us to one of strictly biofuels, bioenergy and to submit it by March 2006 and resurrect what was an interagency working group to be led by the energy commission, which he had the pleasure of leading and Secretary Kawamura has faithfully participated. They appreciated that because there is a huge nexus between the agriculture situation and the CA energy issue and this whole biomass issue. They submitted recommendations to the Governor in March, and in April he put out an executive order asking them to move forward in this area of bioenergy which they broke into two areas, biofuel and biopowers. Biopower is something CA has been engaged in for decades. They have biomass electricity generating plants throughout the state. The recommendations that were made in this was to move aggressively in this bioenergy arena and the Governor endorsed the recommendations of the energy commission at 20% of our transportation fuel supply by the year 2020 come from alternative fuels, and he in turn said a percentage of those fuels should come from biofuels that are provided here in CA from commodities that are grown and produced in CA, not from Midwest grown corn.

Mr. Boyd indicated that from his previous trips, he saw other applications where cities have people break their waste between organic waste and other. They are put into two different colored bags which is picked up and sent to a central facility. The non-organic waste is sorted out optically by a machine, goes into a truck and is hauled off to their biomass, mass burn electricity generating facilities. The organic waste is shredded on site and put into digesters where they also combine other restaurant waste and other animal fat waste and also in this case pig farm waste which is run through digesters and they make biogas. They have created a very large piping system in the Western part of Sweden to put this biogas into a network that provides transportation fuel. Sweden does not have any native natural gas. They import some gas from Denmark and they are now looking at importing LNG as we are here in CA. Sweden has a lot of gas which they have generated from cole sources, but they are also looking at upgrading biogas to methane and beginning to inject it into their system. Our interest would be to use gas on the farm or in other industrial arenas, any excess, or anything produced in centralized plants that could be put into our natural gas system. Natural gas has become quite a concern in this country in the last seven years. The idea of augmenting our natural gas supply is very attractive to an energy commission and the role that the use of biomaterial can play in dealing with has become extremely important. For transportation fuels in Sweden, their two major automotive companies will make a lot of biofuel. They have an actual policy saying that by 2007, 20% of all new cars have to be flexible fuel, biofuel, and by 2008, they will up that percentage to 35%. CA has moved very strongly into the arena of using natural gas and has record setting supplies of waste materials. We have all that cellulostic material in the forest. All the agricultural materials that use to be burned can not be burned anymore for air quality reasons and we have an incredible amount of cellulostic material going to our landfills and we have a waste management problem.

In Sweden they ban organics from going to waste in an effort to preserve their landfills. We now have a lot of drivers moving in the direction of climate change that makes it virtually identical to most of the drivers that exist in Sweden. The Governor, in his directives to the Energy Commission and the Integrated Energy Report, followed by his directive to the Secretary of Resources and the Energy Commission's follow up on biofuels, biogas, bioenergy, have provided us to pursue these types of fuels and to try to get the economics straightened out and start giving credits for avoided costs of forest fires, public health damage from burning waste materials, or not filling up our landfills, to rapidly divert some of the materials there. These are some of the issues the interagency working group will be tackling in the near future. They provided the Governor a detailed action plan for what each agency in the state should do and expect him to release it momentarily. The trip to Sweden has given them access to technology's and policies of another people who are motivated as this state is.

***Biofuels/Update on Sweden Trip***

**Joseph Desmond, Undersecretary for Energy Affairs, CA Resources Agency**

Mr. Desmond provided a copy of the MOU for the Board. The highlight of the trip was the signing of the MOU on behalf of the state of CA. The MOU clearly lays out a commitment to exchange information, ideas, expertise, future exchanges of personnel, each county bearing its own costs associated with that. He feels there is an opportunity to take advantage of their knowledge as we move forward in the development of bio gas applications and will be very significant and a key to winning a number of grant proposals and solicitations that are coming down the pipe. Minister Sommestad was on hand to comment during the exchange of information. The Swedish bio methane industry is very clear in drawing the distinction between biogas. Upgrading the quality to natural gas quality methane is growing at 20% per year. Gothenburg Energy, one of the local gas utilities, has a goal of providing 100% of renewable methane by 2050 and plans to go beyond their digester production and development of synthetic gas from biomass sources. In order to facilitate the infrastructure, Sweden has passed a law requiring the use and deployment of pumps in support of renewable fuels at stations. So the larger fuels stations have so many and then over time it gets smaller and smaller until their expectation is that the requirement for that infrastructure will be throughout the county. Volvo has a 5-fuel vehicle optimized to run on natural gas, biomenthane gasoline 85 and hythane. They have technology that is available for us to use, although not currently marketed here in the U.S., and we believe there are market opportunities for them to take advantage of that. Southern CA gas, one of the members of the team, was so impressed that they now have an internal view of what the business opportunities are, which is to expand their biomenthane programs. There were 13 newspaper articles on the visit and then locally the Wall Street Journal and Mercury News picked up the story. There will be a detailed report produced by Rob Williams of the CA Biomass Collaborative and John Boesel of CALSTART, summarizing the details and the next steps. Undersecretary Desmond indicated they will continue to explore, based on the ideas that they saw, opportunities to develop a biorefinery here in CA. And the reason being is, as Secretary Jones mentioned in the opening of his remarks, there is some distance that technology still has to travel for this to be viable, so we think the combination of a public and private sector partnership working with the agencies can help to assess some of the technology challenges that still remain, as we work toward a viable market.

***Biofuels/Update on Sweden Trip***

**Chuck Ahlem, President, Hilmar Cheese Company**

Chuck Ahlem indicated that he and Secretary Kawamura spent a lot of time during the first year of the administration talking about the future of energy with agriculture and it was really fascinating to watch the progress of the Swedish. Just before the trip, he was brought back to a pioneer facility in Iowa to look at their corn breeding program and got into dialogue about the corn plants and talked about DuPont and the cellulose technology. He saw that people in

Sweden are actually doing it and it was fascinating for him to see the government partnership. There was a very clear partnership with agriculture and how agriculture can play the role in making this whole program work. At Hilmar Cheese, they have the digester now and are looking at maybe working on a joint project with Ashley and Western United to find out if they can run some trucks off of their digester. Further out, they have dairies near the facility where there is a really strong potential to put digesters out there and actually plumbing the facility. So they are not responsible for managing and trying to keep that power going on an on going basis, where you can feed it to one source and they can depress it there or burn it on a full time basis without trying to balance it on the facility. He indicated they will have to work really hard on the regulatory process and see how they can message the regulations and how to maybe bring product onto the dairy to put in those digesters and make them more efficient and really get the bigger bang for the buck to really see some positive cash flow on the other end.

***Biofuels/25x25 Campaign***

**Ernest C. Shea, President, natural Resource Solutions, LLC**

Mr. Shea is the Project Coordinator for the 25x25 Ag Energy Initiative. He indicated that this is an initiative lead by a group of agricultural and forestry leaders who are convinced that there is a big opportunity for land based energy solutions to come into play as we grapple with energy challenges and environmental challenges that the nation is experiencing. The project is about a search for new energy solutions and it is sponsored by the energy future coalition which is a post 911 initiative led by a group of Republican and Democratic leaders who either served in Congress or in the Administrations and have come together around a common objective of attempting to help the nation create a new energy future. They see energy and stability as one of the fundamental root causes of turmoil around the world, economic challenges, environmental challenges, and they are really committed to working together toward finding an energy future. There are about 25 leaders on this coalition that are attempting to create a forum through which different communities can come together and explore new energy solutions. This coalition began an effort to take a look at agriculture and quickly found that they were out of their league. They really did not have the expertise and contacts, so they turned to the 25x25 group and asked them to take a fresh look at what role the agricultural and forestry communities can play in helping the nation improve energy security. The 25x25 campaign designed an initiative that started with a small group and called a steering committee of leaders that were brought together and invited to work with them for a period of time to look into the future and think about what role the agriculture and forestry communities might play as energy producers. What was particularly unique about this initiative is that it is through the lens of national leaders, people who have gone through the ranks of running general farm organizations, commodity groups, livestock organizations, and agribusinesses. Mr. Shea provided briefing folders to the Board Members that provided a brief bio sketch on the individuals that serve on the steering committee. He indicated that they were very fortunate to have Secretary Kawamura as a member of their steering committee. Secretary Kawamura is not only representing CA but also representing the States Department of Agriculture and is helping to provide the national leadership for this initiative. This is a three phase project which consists of creating a vision, building an alliance and constructing an implementation strategy. The first phase was about this vision and the questions boiled down to these three: what roles can the farm sector play; how big a contribution; what has to happen? The conclusions were: agriculture can play a major role in helping the nation achieve energy independence; an enormous and historic opportunity is on the horizon; it is time for the agriculture sector to come together and work collaboratively to capitalize on these opportunities. At the end of this first phase of work, they came up with the 25x25 vision, which is by the year 2025, America's farms, ranches and forests are going to be producing 25% of the total energy that is consumed in the United States, while continuing to produce safe, abundant and affordable food, feed and fiber. To put it into perspective, the total renewable energy production today in the U.S. is somewhere in the 6 to7% range. If you take off hydro, the bulk

of which is today is coming from forest resources, you're only down to 1 or 2% contribution for production agriculture. They then further defined it by clarifying that this is not just about ethanol or biofuels. It is an initiative that will seek to bring together all the ways in which the land and the resources off of the land can be gathered, processed and utilized as an energy commodity. This really is an economic opportunity to redefine the core functions of production agriculture. The leaders have decade's worth of experience working on policy issues at the national level and collectively they see agriculture as stuck in a rut. They see the sector as increasingly being defined as only producing food and maybe fiber. They also see it being defined by outsiders as something not positive, industrial, polluting, and dependent upon public subsidies. So they see a paradigm shift to reposition agriculture in the mind eye of the public as the section that solves problems for the nation. What got these leaders most excited was that it was a way to direct new revenue streams into farming and ranching and forestry operations. Mr. Shea indicated they are now in the third phase of the initiative. The national steering committee has established four primary objectives for 2006, which are to expand national alliance, establish 25x25 as a national goal, form state level 25x25 alliances, and construct an implementation plan. Today there are over 160 organizations that have endorsed this initiative. They have been endorsed by 12 Governors and 4 State Legislatures and are now reaching to non-agriculture partners such as environmental, conservation, labor, energy and other partners. They established a very specific goal between now and the end of the year; they would like Congress to adopt 25x25 as the nation's renewable energy goal. Two weeks ago they had concurrent resolutions introduced in the Congress, House and Senate that would establish 25x25 as the goal. They had 32 original co-sponsors, very powerful Representatives and Senators across a wide spectrum of committees, and the resolutions are now working their way through being reviewed and considered. A copy of the Senate resolution is in the briefing packets. The national goal is by Election Day 2006; over 50% of the U.S. Congress will be on record in support of adopting 25x25 as a national goal. Their steering committee has established a goal that by September 1, 2006, state level 25x25 alliances will be operating in 20 states. They are currently working in the range of 10 to 12 states now. The role of the alliances is to; ensure grass root participation and ownership, vehicle to unite state level champions, and channel support to national and state initiatives. The fourth initiative for this year is to craft an implementation strategy to bring the initiative to life. The goal is to have a roadmap in place by the end of the year that identifies the fundamental building blocks to get to a 25x25 world. Why now? We have the technology, capacity and leadership to offer new energy solutions. These solutions will enhance farm income and strengthen rural communities. The public is also behind them. Voters say they support a new energy policy even if it costs billions more. Mr. Shea indicated they need California's involvement, insight, expertise and leadership skills. California is a very important state and they would be honored to have an opportunity to work with all the leaders who are already working on these tuff issues in the state.

**<u>MOTION</u>: Board Member Karen Ross moved to develop a resolution to support the 25x25 campaign. The motion was seconded by Board Member Craig McNamara. A vote was not carried. Board Member Ashley Boren and Karen Ross will take a look at the broiler template provided by Earnest Shea.**

***Agricultural Science and Technology Museum Project***
**Michele Laverty, Director, Ag Science Center**
Michele Laverty provided an over of the Agricultural Science Technology Museum Project that will be located on the West campus of Modest Jr. College. The new Ag Science Center will connect children with agriculture, providing youth of all ages and backgrounds the opportunity to ask questions, discuss, explore and learn. During their visits, children will encounter hands-on exhibits that introduce them to the world of food, fiber production and the environment while taking a journey from the field to the processor. Once inside the 65,000 square facility, visitors

are taken on a journey of the world's most fertile farmland while providing a unique insight on how the California farmers provides safe and abundant food and fiber for the world's consumers while sustaining air quality, water, and other natural resources. Ms. Laverty went on to describe each of the exhibits and the three central themes. Attendance projections and economic impact are:

- 145,000 visitors per year
- 359 new jobs in Stanislaus County
- $57.5 million in economic activity
- $15.2 million in labor income in Stanislaus

Annual Impact:

- Support 121 jobs in Stanislaus County
- Generates $8.5 million in total annual activity
- Generates $3.4 million in total annual labor income.

Ms. Laverty indicated they would appreciate a letter of support from the Board if they choose to do so. They are looking for diverse groups to support the project and welcome any ideas or input the Board may have.

***Update on Immigration Policy***
**Luawanna Hallstrom, Board Member**
Due to flight complications, Board Member Luawanna Hallstrom could not make the board meeting. The following comments were faxed over and read during the Board Meeting by Board Member Ashley Boren who was sitting in for President Al Montna:

"The good news is that Growers and agricultural employers across California and the country have banded together during the recent fight over immigration in the Senate. Congratulations are in order for with all the hard work, the Senate rejected several harmful amendments and passed a comprehensive immigration reform bill that includes AgJOBS as a separate component. The purpose of defining AgJOBS as a separate component has been and remains for the sole purpose of recognizing and protecting agriculture's unique needs within the immigration debate and ultimate solution. The other purpose was to protect AgJOBS from being otherwise lost in the comprehensive battle although at the same time supporting the President's goal for a comprehensive reform package.

The not so good news is that the House leadership has decided to hold a series of 'field hearings' on the Senate legislation which no doubt slows the process down and challenges if not threatens our ability to get meaningful comprehensive reform done in a timely manner. Our goal still remains reform in 06.

The House has expressed the possibility of up to 30 separate hearings throughout the country. They have vowed not to discuss guest worker programs or how we will deal with the 10 or so million expected illegal here today. They claim that this is because they support the President's goal for comprehensive reform. We will see if they are true to their word.

One of the first House immigration hearings is scheduled for July 5$^{th}$ in San Diego area followed by a similar hearing in Texas. These hearings will be focused on border and terrorism. I am planning to attend the California hearing if possible. Several agricultural groups and associations within California will again band together to hold press events separate from the hearings to tell "the rest of the story". Our commitment has been to do our part to secure our borders while having reasonable access to a legal labor force and streamlined methods.

As I choose to look at the glass ¾ full I would like to remind and commend the agricultural industry for being at the table long ago on this issue. The willingness of the agricultural industry to be forthright and persistent has won them the best position that could be afforded anyone. The process remains difficult as a whole but agriculture has been given the respect it deserves for its leadership. Now the real work begins in how best to ride out the storm and hold agricultures unique placement."

## (8) COMMENTS FROM THE PUBLIC

There are no public comments.

## (9) CLOSING COMMENTS AND ADJOURNMENT

With no further business before the Board, the meeting was adjourned at approximately 1:00 pm.